DOCUMENT RESUME

ED 137 406 TM 006 214

TITLE	A Guide to 1976-1977 Statewide Assessment Results.
INSTITUTION	Florida State Dept. of Education, Tallahassee. Student Assessment Section.
PUB DATE	77
NOTE	44p.; For related documents, see TM 006 212 and 213
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	Academic Achievement; *Basic Skills; *Educational Assessment; Educational Objectives; *Elementary Education; Elementary School Students; Evaluation Criteria; Grade 3; Grade 5; Guides; Information Utilization; Mathematics; Reading; Records (Forms); School Districts; Schools; *State Programs; Testing Programs; Test Interpretation; *Test Results; Writing
IDENTIFIERS	*Florida Statewide Assessment Program

ABSTRACT

One of the priorities of Florida's educational system is helping all students acquire the basic skills necessary to perform the reading, writing, and mathematics tasks required by everyday living. The Florida Statewide Assessment Program provides information on the effectiveness of the state, each district, and each school in achieving this goal by testing public school students on selected basic skills in reading, writing, and mathematics. The primary focus of the Assessment Program is on providing meaningful data on school, district, and state achievement. At the same time, valuable information on each student tested is available to schools in optional student and classroom reports. This guide explains the variety of report forms used to present the results of the 1976-77 assessment of students in grades 3 and 5. Chapter I contains background information about the program and the assessment procedures. Chapter II illustrates and describes each report form. Chapter III discusses considerations in interpreting results to identify strengths and weaknesses at the curriculum, classroom, and student levels. Appendix A contains new statewide basic skills objectives and describes the procedures used to develop them. Appendix B discusses state-established criteria for determining whether or not each student has achieved each objective. (Author/MV)

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A GUIDE TO 1976-1977 STATEWIDE ASSESSMENT RESULTS

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STATEWIDE ASSESSMENT PROGRAM
FLORIDA DEPARTMENT OF EDUCATION

PREFACE

This publication, *A Guide to 1976-77 Statewide Assessment Results*, is designed for teachers, principals, district staff, and other educators who need to be able to read, interpret, and utilize the data from the 1976-77 Statewide Assessment. This guide is divided into three main sections which discuss the Assessment Program itself, the report forms, and utilization strategies.

The guide was prepared by staff of the Student Assessment Section, Division of Public Schools, Florida Department of Education. Questions relative to this report or the Assessment Program may be directed to the staff by calling (904) 488-8198 or by writing:

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CHAPTER I

INTRODUCTION

One of the priorities of Florida's educational system is helping all students acquire the basic skills necessary to perform the reading, writing, and mathematics tasks required by everyday living. The Statewide Assessment Program provides information on the effectiveness of the state, each district, and each school in achieving this goal by testing public school students on selected basic skills in reading, writing, and mathematics.

The primary focus of the Assessment Program is on providing meaningful data on school, district, and state achievement. At the same time, valuable information on each student tested is available to schools in optional student and classroom reports.

A Guide to 1976-77 Statewide Assessment Results explains the variety of report forms used to present the results of the 1976-77 assessment of students in grades 3 and 5. This chapter contains background information about the program and the assessment procedures. Chapter II illustrates and describes each report form. Chapter III discusses considerations in interpreting results to identify strengths and weaknesses at the curriculum, classroom, and student levels.

New Features of 1976-77 Assessment

There are a number of new features in the 1976-77 Statewide Assessment Program. Testing moved from grades 3 and 6 to grades 3 and 5 to better fit the pattern of grade organizations in Florida schools. Most districts' elementary schools have grades K-5, so for many schools a fall sixth grade assessment yielded school reports based on students who had been in the school less than two months, while about 95 percent of Florida's schools have both fourth and fifth grades. This change in grade level was subsequently reflected in the 1976 Educational Accountability Act, which designates statewide testing in grades 3, 5, 8, and 11.

The 1976-77 assessment is based on a new set of statewide objectives. The new objectives were designed to relate specifically to basic skills in reading, writing, and mathematics. Appendix A contains the objectives and describes the procedures used to develop them.

There are also some innovations in reporting. The Assessment Program is again reporting objective achievement, in addition to reporting the percentage of students answering each item. This means that there are state-established criteria to determine whether or not the student has achieved each objective. The criteria are discussed in Appendix B.

Several new reports have been designed for the 1976-77 assessment to better aid teachers, principals, and district staff in utilizing assessment data. For the first time, results are available on a classroom basis, with three optional methods of assembling the information. Student reports are still available, but this year they are printed only if the district requests them. As a new feature, they contain a list of which incorrect answers were selected by the student. This information is summarized for each school and district in a report containing the percentage of students choosing each possible answer.

Assessment Procedures

The 1976-77 Statewide Assessment involved all students in grades 3 and 5, with the exception of those students who are Educable Mentally Retarded, Trainable Mentally Retarded, Profoundly Mentally Retarded, and blind.[1] Some additional students were exempted from testing by school officials because they had special problems which would interfere with their ability to take the test, such as temporary physical or emotional problems or inability to speak English. The guidelines for exemption from assessment are presented in the 1976-77 *Test Administrator's Manual*.

The tests were administered in two days, communication skills the first day and mathematics the second. Districts and schools determined their own testing schedule within the October 4-22 period allowed for testing. Make-up sessions were also held within that period.

The tests were not timed, although the manuals provided approximate times to allow administrators to set aside appropriate blocks of time. Administrators were instructed to allow each student to answer each question, without delaying testing unduly for any one exceptionally slow child. At third grade, the entire test was teacher-paced, with the teacher reading the directions. In the mathematics portion, the teacher read both the directions and any written problems, while the child followed along in his test booklet. At fifth grade, students read the directions and questions.

Third grade students marked their answers in their machine-scorable test booklets. Fifth graders used a separate answer sheet designed to correspond to the test so the answer space for each item contained only as many circles as the item had choices. For third grade, most items had three or four choices, while for fifth grade, most items had four choices.

Calculating Results

Assessment results are presented in terms of the percentage of students correctly answering each item and the percentage achieving each objective. In calculating the percent of correct answers for an item, a student who omits the item is counted as missing it. A student who is absent for a section or whose results have been invalidated is considered NOT TESTED and his results are not included in any scores.

Because of the invalidations and absences, the exact number of students tested on each item and objective varies. Percentages are calculated based on the actual number of students. However, to simplify reports, a single number is used to show the population for the classroom, school, district, and state.

The percentage of students achieving each objective is calculated by classifying each student as either achieving or not achieving the objective. A student achieves an objective by equalling or exceeding a minimum number of correct answers (the criteria). On the reports, the criteria is expressed in the form of a fraction, such as 4/5, with the first number the necessary number of correct answers and the second number the number of items measuring that objective. Appendix B contains an explanation of how the criteria were established.

The percentage of students achieving the objective is the number of students meeting or exceeding the criteria divided by the number of students tested on the objective. As with the percentage correct on each item, students who were absent or invalidated are not included in the calculations.

---

[1]As a special assessment project, blind and visually handicapped students were assessed with specially prepared materials in a separate testing. Their results are not contained in this series of reports.

For instructional purposes, the student and classroom reports include a third category of achievement, UNCERTAIN, to note students whose performance was close to, but below the criteria. Students marked as uncertain on an objective are counted as not achieving the objective. However, the special category points out that development of this skill is of less concern than on objectives not achieved.

If the criteria for achievement is that all of the items must be correct (such as four out of four), the percentage of students achieving the objective will always be equal to or less than the percent of correct answers for the most difficult item in the group. In other words, if the percentage of correct answers for each item is 96, 94, 90, and 78, the percentage of students achieving the objective must be 78 percent or less. On the other hand, if the criteria of achievement is less than all (as in four out of five), the percentage achieving the objective can exceed that of the highest item percentage and may reach 100 percent.

CHAPTER II

ASSESSMENT REPORTS

This chapter describes each of the 1976-77 assessment reports and provides examples of interpretation which are specific to each form. Chapter III provides an overview of the interpretation process, lists factors which should be considered in evaluating performance, and offers suggestions for utilizing the data.

The 1976-77 Statewide Assessment reports are designed to serve two needs: identification of individual third and fifth grade students who currently need further assistance in acquiring basic skills, and identification of areas of the curriculum which need modification in order to help future third and fifth graders acquire basic skills.

Identification of immediate student needs is obtained from the student report and the two classroom reports. Information for instructional planning is provided by the two classroom reports, the school report, and the district report.

The reports are explained in sequence from student to classroom, school, and district to illustrate how the scores are aggregated and how the focus of data interpretation changes. However, in practice, the Classroom Listing of Objective Achievement is the best beginning place for identification of immediate student needs, while the School Report of Objective and Item Achievement is the key to curriculum analysis.

The objectives printed on the reports are abbreviated versions of the 1976-77 Statewide Minimal Objectives for mathematics and communication skills. The objective numbers on the report correspond with the numbering system used on the full objectives, which are included in Appendix A. Information on which items measure each objective is printed on the Classroom Summary of Item Achievement report, in the *Teacher's Edition* of the 1976-77 assessment booklets, and in Appendix C of this report.

The statewide objectives are grouped into general skill categories, such as *vocabulary*, *comprehension*, and *rhetorical and syntactical skills* for communication skills, or *number and numeration*, *addition*, and *problem solving* for mathematics. The categories are printed on most of the reports, immediately above each group of objectives.

GRADE 3

1976-77 STUDENT REPORT
FLORIDA STATEWIDE ASSESSMENT PROGRAM

68 1234
WENDOVER ELEMENTARY

NAME	BIRTHDATE	STUDENT I D	DIST DATA
GURNEY JEAN L.	04/29/66		

MATHEMATICS OBJECTIVES	Criteria for obj.	Obj Achieved Yes	?	No	# Items Correct	Item Achievement Record
NUMBER AND NUMERATION						
1 Count up to 100 objects	4/5	*			5	XXXXX
4 Read and write 3-digit Arabic numerals	5/6		<		4	XCXAXX
7 Identify ordinal position (to 10)	2/2			-	0	BD

The skills measured on the test are described under the headings *Mathematics Objectives* and *Communication Skills Objectives.* If NOT TESTED appears by some objectives, it means your child missed part of the test and has no scores for those objectives.

The first number shows how many items your child had to get right in order to achieve the objective. The second number is the total number of items measuring that objective.

Shows those objectives which were achieved (marked with an "*" in the YES column), those which were not achieved (marked with a "—" in the NO column), and those on which achievement is uncertain (marked with a "<" in the ? column). Objectives with a "—" or "<" are those on which your child may need help.

Gives the number of questions your child answered correctly for each objective.

Shows which questions your child answered correctly (marked with a "+"), which were missed (marked with a letter indicating which wrong answer was chosen), and which were omitted (marked with an 0). This column, which must be used with the test booklet, allows the teacher to pinpoint difficulties.

TOTALS	48	items correct of	64
	9	objectives achieved of	13

TOTALS found at the bottom of the report show how many objectives your child achieved and how many items were answered correctly on the test.

Student Report

The Student Report, a detailed record of a student's achievement of the Statewide Minimal Objectives, is provided upon request by the district. Although designed for the teacher, the report can also be useful in communicating information about student achievement to parents, so the back of the report contains an explanation of the report written in both English and Spanish.

The front of the report gives information about the student's achievement of the objectives and items, with communication skills on the left side and mathematics on the right side. The illustration on the left, taken from the back of the report, shows the layout of the Student Report and explains how to read it.

As the key on the report explains, objectives which a student achieves are marked with an "*". Objectives which are not achieved are marked either with a "−" or a "<". The "<" symbol is used to note objectives on which achievement was borderline, while the "−" symbol marks objectives on which performance was very low.

The Student Report contains one type of information which is not available elsewhere: a record of which items were answered correctly (marked with a +), which were omitted (O), and which answer was selected for incorrect items (marked with the letter of the choice). This information is provided to assist in diagnosing a student's specific needs, since the choice of incorrect answers often reveals common kinds of errors that students might make.

The item data are printed on the report in the same sequence that the items appear in the test booklet. Thus, if a student had an item achievement record of ++++A, it means that he got the first four items for the objective right but chose A for the fifth item. Appendix C shows which items measure each objective.

An easy way to determine how well the child did overall is by scanning the information under OBJECTIVE ACHIEVED. If many asterisks are present in the YES column, it indicates that the child achieved most of the objectives. A pattern of "−" signs grouped together in a category (such as problem solving) indicates that the student's difficulty is concentrated on the general skill. Scattered "−" signs, on the other hand, may mean that the student has mastered the easier skills in each category but needs further work on the more advanced skills. Careful analysis of this report and further work with the student should confirm his/her strengths and weaknesses.

CLASSROOM LISTING OF OBJECTIVE ACHIEVEMENT

1976-77 STATEWIDE ASSESSMENT PROGRAM
FLORIDA DEPARTMENT OF EDUCATION

GRADE 3

MATHEMATICS

DISTRICT: SUNSHINE — No. of Students: 1254
SCHOOL: SUNNYVILLE ELEM SCHOOL — 90
CLASS: MR. BUTCHER — 28

KEY:
* = Objective achieved
< = Objective achievement uncertain
— = Objective not achieved
NT = Not tested on this objective

OBJECTIVE NUMBER	1	4	7	19	32	33	34	37	38	39	90	105	118				
	Count up to 100 objects.	Read and write 3-digit Arabic numerals.	Identify ordinal position (to 10).	Order two whole numbers less than 100.	Add four 1-digit numbers, sums to 18.	Add a 2-digit and a 1, 2 or 3-digit number.	Add 1 and 2-digit numbers with regrouping.	Subtract basic combinations.	Subtract 1-digit from 2-digit number, no regrouping.	Subtract 2-digit numbers, no regrouping.	Determine equivalent amounts using coins.	Solve practical addition problems, no regrouping.	Solve purchase problems totaling less than 50¢.	TOTAL OBJECTIVES ACHIEVED OF 13	TOTAL ITEMS CORRECT OF 64		
CRITERIA	4/5	5/6	2/2	6/6	4/5	5/6	4/5	5/7	4/5	4/5	3/3	4/4	4/5				
ADAMS, KRISTIN	3<	4<	2*	4–	3<	2–	4*	2–	3<	3<	1–	1–	2–	2	34		
BAKER, CHARLES	4*	6*	2*	5*	5*	5*	4*	6*	5*	5*	3*	4*	5*	13	59		
COLLINS, WASHINGTON	3<	2–	2*	6*	3<	2–	3<	5*	3<	3<	2<	2–	5*	4	41		
DICICCO, EMIL	4*	3–	2*	3–	4*	5*	2–	7*	3<	4*	3*	4*	2–	8	46		
ELFEN, JOHN	3<	3–	2*	5<	4*	2–	4*	1–	3<	3<	1–	1–	5*	4	37		
CLASS PERCENT OF STUDENTS ACHIEVING THE OBJECTIVE	90	60	96	88	76	78	74	79	88	88	80	70	75				
SCHOOL PERCENT OF STUDENTS ACHIEVING THE OBJECTIVE	92	55	90	88	78	85	80	86	92	94	98	78	80				
DISTRICT PERCENT OF STUDENTS ACHIEVING THE OBJECTIVE	85	60	82	80	70	78	76	80	85	90	92	72	81				

NUMBER OF ITEMS ANSWERED CORRECTLY FOR EACH OBJECTIVE

Classroom Listing of Objective Achievement

The Classroom Listing of Objective Achievement, a summary of each student's status on each objective, is the report to examine first in interpreting test results, as it provides insight into both classroom and student strengths and weaknesses.

The report contains all of the information printed on the Student Report except the record of which incorrect choices the student selected. In addition, the Classroom Listing gives summary information showing the percentage of students in the classroom, school, and district who achieved each objective. The information provided on this report is explained by the illustration on page 8.

There are separate Classroom Listings for mathematics and for communication skills. For third grade, communication skills is on one form, as is mathematics. However, at fifth grade each subject requires two forms, the first labeled "Part 1" and the second labeled "Part 2". As each form has room for only 30 students, there will be additional pages if there are more than 30 students in a class.

The format of the Classroom Listing makes it easy to identify which students did best on each subject and which ones are most in need of assistance by scanning the totals for each student in the columns at the far right headed TOTAL OBJECTIVES ACHIEVED and TOTAL ITEMS CORRECT. Lower total scores indicate the students who are having the most difficulty with the skills measured on the test.

Having identified which students need assistance, the areas of need for each student can be determined by reading across the report and noting the minus (−) symbols. The same information is presented on the Student Report; however, the Classroom Listing permits identification of students with similar problems so they can be grouped for diagnostic testing and follow-up instruction.

The format of the report also allows identification of those problems which are shared by the most children. The percentages at the end of the report show the percentage of students achieving each objective for the classroom, school, and district. Again, lower scores indicate that larger numbers of children have difficulty with the skill.

The school and district percentages provide a framework for comparison of class achievement. Whether a classroom's scores are above or below those of the school and district, there is usually a fairly consistent pattern. Exceptions of 10% or more to that pattern may be meaningful. Higher scores may indicate that students received an exceptionally effective instructional technique for that skill, while a noticeably lower score may identify an objective which needs more emphasis.

Once "problem" objectives are identified, the information on the Classroom Summary of Item Achievement (see page 11) can provide more indications of what aspects of the skill need attention.

CLASSROOM SUMMARY OF ITEM ACHIEVEMENT

1976-77 STATEWIDE ASSESSMENT PROGRAM
FLORIDA DEPARTMENT OF EDUCATION

GRADE 3

DISTRICT SUNSHINE — No. of Students: 1254
SCHOOL SUNNYVILLE ELEM SCHOOL — 90
CLASS MR. BUTCHER — 28

COMMUNICATION SKILLS

Obj No	Item No	Percent Answering Correctly: Class	School	District
1	1	50	52	48
	2	48	51	47
	3	32	35	30
	4	88	91	87
	5	92	95	91
	6	90	92	89
	7	80	82	79
	8	74	76	73
	9	77	79	77
	10	65	68	64
	11	85	88	83
	12	89	92	88
	13	92	95	91
	14	87	90	86
	15	91	93	90
	16	76	78	75
	17	82	84	81
	18	90	94	88
	19	98	99	96
23	59	25	27	24
	60	35	38	32
	61	41	43	40
	62	30	32	28
	63	19	21	16
27	64	85	87	82
	65	81	85	78
31	66	92	94	88
	67	90	91	86
38	68	76	78	73
	69	71	75	69
40	57	53	54	50
	58	59	62	58
44	20	42	50	40
	21	80	82	78
46	22	22	26	20
	23	28	30	26
53	78	90	92	88
	79	82	84	80

MATHEMATICS

Obj No	Item No	Percent Answering Correctly: Class	School	District
1	82	65	65	60
	83	70	73	56
	84	85	87	80
	85	77	81	70
	86	82	84	78
4	87	80	82	70
	88	78	80	70
	89	83	83	76
	90	72	75	68
	91	66	67	60
	92	70	71	66
7	96	96	96	88
	97	96	92	86
19	93	80	83	76
	94	83	86	80
	95	78	79	72
	98	72	75	69
	99	88	90	83
	100	90	92	87
39	129	60	62	56
	130	55	58	50
	131	45	47	40
	132	48	50	42
	133	72	74	68
90	134	90	92	86
	135	88	90	82
	136	88	90	80
105	137	95	97	91
	138	90	92	87
	139	96	99	91
	140	80	82	77
118	141	45	47	42
	142	48	50	45
	143	58	60	50
	144	46	48	40
	145	42	44	39

Classroom Summary of Item Achievement

The Classroom Summary of Item Achievement gives the percentage of students answering each item correctly for the classroom, school, and district. It is a follow-up report to the Classroom Listing of Objective Achievement. The report for each grade is a single page which contains information on both communication skills and mathematics.

The objective numbers are in sequence, with all items measuring that objective listed beside the objective. The item numbers correspond to the numbers used in the 1976-77 test booklets for grades 3 and 5.

This report is primarily useful for determining patterns of item achievement within an objective. An item or items on which student performance is lower will be immediately apparent. By referring to the test booklet, the teacher can determine in what ways, if any, this item differs from the others and thus make further diagnoses of students' difficulties. For example, the results for mathematics objective 4 in the illustration on page 10 show that item 91 is the most difficult. Examination of the items in the test booklet indicates that it is a 3-digit number, such as 459.

In evaluating item performance, the criteria for the objective and the percentage of students achieving the objective must be considered. If the criteria is 100 percent (all items correct) and the percentage of students achieving the objective is very close to that for the lowest item, it indicates that the class is divided into two groups: those who have the skill and those who do not (as objective 7 on pages 8 and 10). An objective percentage which is 10 percent or more below the lowest item, on the other hand, suggests that while some students have acquired the skill, others have begun developing it but have not yet achieved mastery. Still others may be in the "yet to begin" group.

1976-77 SCHOOL REPORT OF OBJECTIVE AND ITEM ACHIEVEMENT
STATEWIDE ASSESSMENT PROGRAM
FLORIDA DEPARTMENT OF EDUCATION

DISTRICT: 68 SUNSHINE
SCHOOL: SUNNYVILLE ELEMENTARY

NUMBER OF STUDENTS TESTED
SCHOOL: 90
DISTRICT: 1254
STATE: 111473

GRADE 3 MATHEMATICS

NUMBER AND NUMERATION	OBJECTIVE CRITERIA	PERCENT OF STUDENTS ACHIEVING THE OBJ. SCHOOL	DISTRICT	STATE	ITEM NO.	PERCENT OF STUDENTS ANSWERING ITEM CORRECTLY SCHOOL	DISTRICT	STATE
1. COUNT UP TO 100 OBJECTS.	04/05	92	85	84	082	65	60	59
					083	73	56	60
					084	87	80	81
					085	81	70	70
					086	84	78	76
4. READ AND WRITE 3-DIGIT ARABIC NUMERALS.	05/06	86	80	78	087	82	70	70
					088	80	70	72
					089	83	76	74
					090	75	68	67
					091	67	60	61
					092	71	66	65

School Report of Objective and Item Achievement

The School Report of Objective and Item Achievement contains the percentage of students achieving each objective and item for the school, the district, and the state.

Strengths and weaknesses can be determined in three ways: by evaluating performance on objectives which are school priorities, by looking for the percentages which are the highest and lowest, and by looking for percentages which are markedly different from district or state scores. This means that it is possible for the school to have several definitions of what is a low score on Statewide Assessment. For example:

1. On objectives which are school priorities, a low score can be anything under some arbitrary level set by school staff, such as 90 percent.

2. Low scores are the lowest percentages of achievement, such as the five to ten lowest scores.

3. Low scores are those which are at least 5 percent below either the district or the state.

These three standards represent different approaches to interpretation of assessment data. By looking at all three types of low scores, the school will be able to discern the primary skills which need attention. School strengths can be identified in the same way, by focusing on high scores.

Once the school has identified objectives which warrant further attention, the item data on the right of the School Report can often provide clues as to which specific skills should be emphasized in instruction. Again, the low scores are usually the key.

An item percentage which is substantially lower than others measuring the same objective may represent a different or more difficult skill. An examination of the actual items should identify any differences in item type. For example, for objective 4 in the example report (page 12), item 92 is the most difficult. Comparing it to others in the test book shows that it is a three-digit number with a zero in the tens' place, while the others are less difficult. This suggests that students' primary problem is with zeroes in middle positions.

While those objectives which are priorities for the school deserve the most attention, check for isolated items on which performance is low, since they frequently measure a more difficult concept that has not yet been fully mastered. The pattern between school and district scores should also be examined. Check for items which contradict the pattern. An unusually low school score may indicate that the school needs to examine its instructional approach to that skill, while scores higher than the district may indicate that the school has an effective instructional technique which could be shared with others.

Once an examination of item achievement percentages and the analysis of the actual test items suggest some probable causes for the problem, further analysis can be done by studying the school's Item Analysis Report (described on page 16) to determine whether student selection of incorrect answers adds any further insight into the problem. Additional testing and diagnosis may then be needed to determine if the problem still exists and its cause has been correctly identified. If so, instruction can be designed to address the problem.

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SUNSHINE

GRADE 3

LISTING OF SCHOOL ACHIEVEMENT

1976-77 STATEWIDE ASSESSMENT PROGRAM
FLORIDA DEPARTMENT OF EDUCATION

PERCENT OF STUDENTS ACHIEVING MATHEMATICS OBJECTIVES & ITEMS, PAGE A-01

	STATE	SUNSH	0021 ARTHU	0031 MCBRI	0041 CLEVE	0051 DAVIS	
**** 001 - COUNT UP TO 100 OBJECTS.							CRITERIA = 04/05
OBJ %	80	84	83	86	81	87	
001-082	81	85	86	90	82	91	
001-083	56	60	58	60	57	62	
001-084	80	80	82	83	80	84	
001-085	74	74	76	79	77	81	
001-086	76	78	78	83	81	82	
**** 004 - READ AND WRITE 3-DIGIT ARABIC NUMERALS.							CRITERIA = 05/06
OBJ %	54	60	66	67	64	53	
004-087	62	70	73	74	71	68	
004-088	70	75	74	72	78	69	
004-089	63	76	79	80	74	70	
004-090	59	68	70	66	67	68	
004-091	52	60	64	62	61	53	
004-092	57	69	69	72	63	60	

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District Listing of School Achievement

The District Listing of School Achievement presents the scores on objectives and items for all schools in the district. It is provided to give district staff the information for all schools in a less bulky format than working with each separate school report.

The report also contains the district and state scores, so it can be used for interpreting district performance as well as for examining school results.

The report has a new format this year. The schools are listed across the report, identified by their Department of Education school number and by the first five letters of the school name. The objective and item scores are printed vertically underneath the abbreviated objective. A maximum of 13 schools can be printed on each sheet of paper, so districts with more than 13 schools per grade will have additional copies of each page.

Evaluation of district performance involves essentially the same steps as for evaluation of school and classroom data, so the explanations on pages 9, 11 and 13 are not repeated here.

This report facilitates an examination of each school's effectiveness in helping students acquire basic skills. The first step should be to identify for each school its basic achievement pattern: are scores above, consistent with, or below district scores? This pattern should be considered in conjunction with information about the school's population and instructional program to identify schools which need assistance with specific aspects of their curriculum or which appear to have effective instructional programs.

Item Analysis

An Item Analysis is provided for each school and district. It gives the percentage of students selecting each choice for each item. An asterisk marks the correct answer.

The Item Analysis can provide additional information about what kinds of errors students are making so that instruction can be more specifically tailored to meet student needs. It can best be used by teachers and curriculum specialists who can compare the percentage responses for each choice with the actual answer choices in the test booklet. This will assist in diagnosing students' difficulties with specific skills.

1976-77 ITEM ANALYSIS
STATEWIDE ASSESSMENT PROGRAM
FLORIDA DEPARTMENT OF EDUCATION

PAGE 001

DISTRICT: SUNSHINE
SCHOOL: ARTHUR
GRADE 3 MATHEMATICS

NUMBER STUDENTS TESTED
SCHOOL: 90
DISTRICT: 1254

OBJ. NO.	ITEM NO.	A	B	C	D	E	OMIT
1	082	6	86*	6	2	0	0
	083	22	12	58*	8	0	0
	084	0	3	15	82*	0	0
	085	5	0	19	76*	0	0
	086	9	78*	10	3	0	0

OBJ. NO.	ITEM NO.	A	B	C	D	E	OMIT
4	087	8	8	8	73*	0	3
	088	74*	2	20	4	0	0
	089	0	79*	5	16	0	0
	090	0	5	70*	25	0	0
	091	1	6	64*	27	0	2
	092	9	69*	11	11	0	0

CHAPTER III

INTERPRETATION AND UTILIZATION

The assessment scores in and of themselves are not an evaluation of performance. Instead, they are a description of performance, a measure of status. Evaluation requires interpretation of the data in light of local goals and curriculum to determine whether the performance on each objective is satisfactory, acceptable, or less than desired.

Interpretation of scores provides meaning to the data and direction to instructional activities designed to meet students' needs. This chapter provides suggestions to make interpretation easier, discusses factors which should be considered in interpretation, and offers some techniques for utilization of the results and communicating them to others.

Shortcuts in Interpretation

The Statewide Assessment reports contain much information about student achievement. Although all of the information is important, it is impossible for anyone to deal simultaneously with all of the data on all of the objectives. The shortcuts described in this section should help identify those objectives which represent the greatest potential problems.

When the assessment results first reach the school, the most pressing level of analysis is at the student level. Which third and fifth grade students, if any, need additional help in acquiring basic skills? What skills caused them problems?

Once these two questions have been addressed, analysis turns to the impact of the assessment results for curriculum. Questions such as these must be considered:

1. Are there skills which students were assumed to have acquired but have not?

2. Does the third or fifth grade curriculum need to be restructured in any way to provide assistance to students who have not acquired basic skills?

3. Are modifications needed in second and fourth grade curriculums to strengthen their emphasis on these basic skills?

Without direction, analysis can be a lengthy process. The following steps should shorten the process and make the outcome more usable. The suggestions apply equally whether student, classroom, school, or district results are being interpreted.

First, study the 1976-77 Statewide Minimal Objectives to determine which are priorities according to local instructional goals. Make some estimations of what levels of student performance would be desirable. On a priority objective that 95 percent of the students are expected to achieve, a score of 85 percent would be unsatisfactory. On the other hand, 85 percent might be good if this skill has not been emphasized in the past.

Second, once results are available, answer the following questions about performance on objectives:

1. Overall, in what areas are students strongest?
2. In what areas are they weakest?
3. How did students do on local priorities?
4. Are there any surprise areas of weakness?
5. On which objectives do students appear to need further assistance, and in what order should they be considered?

After determining which objectives should be worked on first, an examination of item performance can help identify more specifically what caused the low performance. For each objective, determine:

1. Is performance on any item or subgroup of items substantially lower than on others measuring the objective?
2. Are there differences in item type which suggest why performance would be lower? (Examine test booklet and compare the items measuring the objective.)
3. Do students still have the problem? (Retest.)

While examining item performance, watch for isolated items on which performance is low, even if the objective achievement was acceptable. Again, the low item may represent a more difficult concept that has not yet been fully mastered.

Considerations in Valid Interpretation

There are a number of factors which educators should consider when interpreting the results of the 1976-77 Statewide Assessment. These include (1) the impact of minimal objectives, (2) varying difficulty levels, (3) changes in student performance, and (4) comparing percentages of achievement.

The Impact of Minimal Objectives

The 1976-77 Statewide Assessment is based on the newly developed statewide objectives for mathematics and communication skills. The objectives identify the minimal skills virtually all Florida students should acquire, rather than those skills a majority of students should attain at a grade. As a result, the objectives and test items are somewhat easier than those of previous years, so assessment scores may be generally higher.

These higher scores can create communication problems, especially if the scores are compared to those of previous years without carefully comparing the skills as well. Any releases of assessment data should point out that the 1976-77 tests are not entirely comparable to the 1975-76 tests and evaluation of growth must be made cautiously.

A second potential danger caused by high scores would be the conclusion that, since scores are high, the curriculum is effective and no changes are needed. However, since these are basic skills, students who have not acquired the skills need additional help now, so they will not be further behind at higher grades. In addition, the fact that there are any nonachievers at all suggests that there are needs which could be addressed more effectively by the curriculum.

The final concern related to the impact of minimal statewide objectives is the fear that our educational system will become geared to these minimums, rather than continuing to emphasize a variety of higher skills to meet the needs of all students. The state's emphasis on first acquiring basic skills does not mean that other areas should be neglected, and it is a challenge to all educators to make sure that this does not occur.

Varying Difficulty Levels

The 1976-77 statewide objectives are not of equal difficulty, so uniform high levels of performance may not be attained. High levels are desirable in keeping with the educational system's commitment to help all students acquire basic skills, but the variation in difficulty must be considered.

The categories in each subject area form a general hierarchy. Vocabulary skills, for example, are prerequisites to, and usually easier than, comprehension skills, which in turn are prerequisites to critical skills. Likewise in mathematics, computation with whole numbers precedes both problem-solving with whole numbers and computation with fractions.

There may also be hierarchies within a category of objectives, with the objectives presenting a progression of difficulty, such as being able to determine if sentences have the same meaning before being able to recognize when paragraphs mean the same thing. This does not imply that all objectives within a category represent increasing steps of difficulty, but some do.

Similarly, the items measuring each objective are also not necessarily of equivalent difficulty. For some objectives, the items purposely progress from easy to hard, such as from multiplying numbers like 32 x 2 to numbers like 234 x 9, or from pluralization of words like *brush* to pluralization of words like *baby*. Such progressions test a student's achievement of the skills over a broader area, but they also pose problems in interpreting and communicating results. As long as the item is a valid one, greater item difficulty is not an excuse for lower performance. It is simply an indication that students need help with the more advanced applications of the skill.

Changes in Student Performance

It is important to remember that assessment measured students' skills at a single point in time, somewhere in October. It is very possible that students have acquired those skills since then. Thus, the first step should be to ascertain whether the problems identified by the assessment results still exist. Information may already be available to show that the skills have been acquired because of classroom testing or working with students. If not, brief tests or exercises could be administered to pinpoint any difficulties which are still present. After verifying areas of weakness, instruction should be aimed at helping students learn the skill identified in the objective, rather than at helping them answer particular test items.

Comparing Percentages of Achievement

While percentages of achievement are clear and easy to understand, they encourage the expectation that scores should be 100 percent, or at least 99 percent, and that anything less is a reflection of the educational system's inadequacy. This can create a communication problem between school officials and the public.

The problem is compounded when comparisons are made, for example, between classroom and school scores. Comparisons are not bad. They may help identify a school with a particularly good instructional program for a skill or help select the classroom which most needs additional help for the students. But, in order for comparisons to be used positively, there must be some guidelines to determine which differences are big enough to warrant attention.

Unfortunately, consideration of what constitutes a "statistically significant" difference is usually not a satisfactory approach. The large number of students tested in a typical district often makes any difference "significant". For this reason, it is better to take a cautious, practical approach to the task.

In a typical classroom of 25 to 30 students, one student represents 3-4% of the class total. Thus, the score is 100% if all students achieve an objective, 96% if one misses it, 92% if two miss it, and so on. In other words, one student may make a big difference in a summary score. Consequently, in comparing percentages of achievement between classroom units, look for differences of about 10 to 15%.

At the school, district, and state levels, performance of an individual student has less impact on the total score. For these larger groups, a handy rule of thumb would be to consider differences of at least 5% as being of practical significance.

Effective Utilization

Effective utilization of assessment data depends upon (1) effective communication and (2) taking steps which will encourage implementation of recommendations based on the data. A few techniques for these activities are offered here.

Communicating Assessment Results

State assessment results should be communicated to various audiences with different purposes in mind. For example, third and fifth grade teachers need to know about the results so they can assist the students. Other elementary teachers need the data to make decisions about curriculum changes. Parents of third and fifth graders need to understand their child's results so they can become involved in the educational process and provide help at home. Citizens at large, school advisory committees, and school board members need test data so they can be informed and make more wise decisions about school policies.

The above list is not complete, and all possible communication goals have not been shown. Educators can develop effective communication plans by answering the following questions:

1) Who should know about test results?

2) What specific information and knowledge do these audiences need?

3) How can the information best be communicated with these audiences?

4) How can it be determined if the audiences are "getting the message"?

This brief discussion is not meant to provide enough information for educators to design a complete dissemination program. There are public relations specialists available for this task, and additional details can be provided by the Assessment Program staff in the Department of Education. The major purpose of this discussion is simply to indicate that communication of results is an important phase of any testing program. In many ways, more problems are created by not communicating effectively than by doing so.

Steps for Successful School Use of Results

Reading and interpreting data is a necessary first step, but it should be followed by actual utilization of the data. The following list of specific suggestions is designed to lead school staff to full utilization of assessment data. The school staff should consider these steps and adapt to the local situation as may be desirable. It should be recognized that the school principal and teachers can best accomplish full use of the test data by working cooperatively. Involvement heightens commitment to the task and facilitates communication between teachers at different levels.

1. Assemble committees of teachers from several levels to analyze the school summary data for strengths and weaknesses.

2. Compare the statewide minimal objectives to local objectives to determine areas of similarity and difference.

3. Determine the school's priority instructional objectives from among those tested.

4. Establish school level improvement objectives for the remainder of the school year. Provide for posttests to determine gains made.

5. Help third and fifth grade teachers establish specific improvement goals for students not meeting priority objectives.

6. Assemble committees of teachers from the elementary and middle (or junior high) levels to discuss instructional weaknesses and coordination of curriculum.

7. Review currently used instructional materials to determine their relationship to the tested minimal objectives.

8. Provide for the communication of assessment results to individual parents and to the school advisory council or other parent groups.

9. Analyze other test data available to the district (and other available information) and relate them to the assessment results.

10. Combine resources and effort with two or three other schools which have similar priority objectives to develop instructional materials and posttests.

There are, of course, other steps that may be taken; these are only suggestions. Assessment data does not have value by itself—it only has value when it is understood and properly utilized. Without effort and commitment, the data will only reside in storage, useful to no one.

APPENDIX A

STATEWIDE MINIMAL OBJECTIVES

Introduction

Establishment of statewide educational objectives for Florida is required by Section 229.57, Florida Statutes, the Educational Accountability Act of 1971. The objectives, which are adopted by the State Board of Education, reflect the state's emphasis on achievement of basic skills in reading, writing, and mathematics.

The objectives are used as the basis for the Florida Statewide Assessment Program, also created by Section 229.57. The Statewide Assessment Program measures students on their achievement of the statewide minimal objectives in order to provide information at the state, district, and school level on the effectiveness of instructional programs in helping students attain desired basic skills.

The statewide minimal objectives for all students are established for the purpose of educational accountability and do not represent the desired higher educational goals and objectives that a majority of students should attain at a corresponding grade level. Rather, they identify those minimal skills which all Florida students should acquire in order to perform the reading, writing, and mathematics tasks required by everyday living. Individual districts, schools, and teachers will establish additional objectives which reflect the many other skills that students should acquire.

The statewide minimal objectives were developed and reviewed according to the following criteria:

1. The achievement of the skill is a reasonable instructional goal for every student in that grade in basic education programs who has appropriate instruction and motivation and is not impaired by a mental or physical handicap. This does not imply that every student is now able to achieve the objective, but that every student should be able to achieve the objective if he/she receives appropriate instruction.

2. The highest objective (usually grade 8 or 11) realistically specifies the maximum skill difficulty needed by the student to perform effectively the reading, writing, and mathematics tasks required by everyday living.

3. For objectives at lower grade levels, achievement of the objective is necessary at that grade for the student to make normal progress towards the desired highest level skill.

4. The objective is not a process objective related to a particular instructional method.

Organization of the Statewide Minimal Objectives

The statewide minimal objectives represent basic skills in two areas: mathematics and communication skills (reading and writing). Reading and writing are combined under communication skills because of the many skills they have in common, such as vocabulary development and study skills.

For each subject area, the objectives are written at two levels: a brief set of *Milestone Objectives* written for the public to summarize the basic skills expected of all Florida students and a more detailed set of *Grade Level Objectives* written for educators.

The *Milestone Objectives* identify the essential terminal skills necessary for students to perform everyday tasks in reading, writing, and mathematics.

The *Grade Level Objectives* define each milestone objective by specifying what aspects of the skill should be acquired by selected grades (3, 5, 8, and 11) so that the student will have mastered the milestone objectives by the time he/she leaves the public school system. Thus, there are several grade level objectives for each milestone objective, for a total of 135 grade level objectives in mathematics and 118 grade level objectives in communication skills. Grade level objectives are developed only for the grades at which statewide assessment will occur: grades 3, 5, 8, and 11. For each grade, the objectives identify entry level performance for that grade.

Because the grade level objectives are written for teachers and curriculum specialists, some use specialized terms, such as "superlatives," "complex declarative sentences," "fractional regrouping," "partial products." However, Statewide Assessment is designed to measure students' achievement of skills rather than their knowledge of specialized terms. Thus, unless an objective specifies that the student is to define or label the terms, knowledge of terms is not tested.

Preparation of the Statewide Minimal Objectives

Essentially the same set of objectives was used for Statewide Assessment from 1972-73 through 1975-76, although during that time the objectives were revised and the number of objectives reduced. Because experience gained during that period indicated that not all of the objectives were basic skills and that many did not communicate clearly to the public or to educators, the Department of Education developed new statewide objectives which have been adopted by the State Board for the 1976-77 school year.

The statewide minimal objectives were developed through a lengthy process which involved a number of reviews. The initial set of milestone objectives was prepared by the Department of Education. Working from the milestone objectives, curriculum specialists in Dade County prepared a preliminary set of grade level objectives for each subject area. After extensive revisions from the Department of Education, the objectives were reviewed by state-representative task forces composed of educators with teaching experience in the appropriate subject areas and grades. The task forces made substantial modifications in the objectives, which then underwent another review by the Dade County specialists and by the Department of Education.

All Florida school districts were then invited to review the proposed objectives. Sixty-one of Florida's 67 districts participated in this review. The district review committees involved more than 1400 teachers, 250 district staff members, 250 principals and other school administrators, 125 citizens, and 65 students.

The committees were asked to identify any objectives which did not meet the definition of basic skills, were inappropriate for assessment at the grade proposed, or were not clearly written. Based on the results of this review, the Department changed the grade levels on two objectives and the wording on several others. The resulting set constitutes the new statewide minimal objectives.

Questions and comments about the statewide minimal objectives may be directed to the Bureau of Curriculum and Personnel Development or to the Student Assessment Section of the Department of Education, Tallahassee, Florida 32304.

Communication Skills Minimal Milestone Objectives

1. The student will acquire a basic vocabulary.
2. The student will determine word meaning from the way the word is used in a passage.
3. The student will determine word meaning from a knowledge of word parts.
4. The student will spell words correctly.
5. The student will determine whether different messages have the same meaning.
6. The student will determine the main idea of a message.
7. The student will find information in a message.
8. The student will determine the causes and effects of events and actions.
9. The student will determine the logical generalizations which can be drawn from a message.
10. The student will distinguish fact from fantasy, opinion, and supposition.
11. The student will recognize false and invalid statements.
12. The student will follow oral and written directions.
13. The student will identify appropriate sources for needed information.
14. The student will use appropriate reference skills with dictionaries, tables of contents, and maps.
15. The student will organize objects, information, and ideas into logical groupings and orders.
16. The student will compose grammatically correct sentences.
17. The student will write messages which supply the necessary information.
18. The student will fill out common forms completely and accurately.
19. The student will punctuate correctly.
20. The student will capitalize correctly.
21. The student will write legibly.

NOTE: In reading, many objectives are repeated at successive grades with increasingly more difficult reading materials. The statewide objectives are based on minimum readability levels for materials, with the expectation that most students will be able to read more difficult materials. These minimum readability levels are:

11th grade, at least 7.0	5th grade, at least 3.0
8th grade, at least 5.0	3rd grade, at least 1.5

COMMUNICATIONS SKILLS MINIMAL OBJECTIVES

Grade(s)		
	I.	**The Student Will Acquire A Basic Vocabulary.**
3-5-8-11	1.	The student will associate printed words with their oral equivalents.
5-8-11	2.	The student will associate words with antonyms and synonyms.
	II.	**The Student Will Determine Word Meaning From the Way the Word is Used in a Passage.**
5-8-11	5.	The student will determine the meaning of a word in context using synonym and definition clues.

III. The Student Will Determine Word Meaning From a Knowledge of Word Parts.

3-5-8-11 10. The student will associate compound words with their component words.
5-8-11 11. The student will associate contractions with their component words.
5-8-11 12. The student will associate the appropriate inflected words (plurals, possessives, comparatives, superlatives, tense) with a given context.

IV. The Student Will Spell Words Correctly.

3 14. The student will spell correctly his/her first and last name.
3-5-8-11 15. The student will spell correctly words on the state adopted basic spelling list.
5 16. The student will spell correctly his/her address.

V. The Student Will Determine Whether Different Messages Have the Same Meaning.

3-5-8-11 18. The student will determine whether different sentences have the same meaning.
5-8-11 19. The student will determine whether different paragraphs have the same meaning.

VI. The Student Will Determine the Main Idea of a Message.

3-5-8-11 20. The student will determine the main idea stated in a paragraph.

VII. The Student Will Find Information in a Message.

3-5-8-11 23. The student will find who, what, where, when, which, and how information in a selection.
5-8-11 24. The student will determine the order of details in a selection.

VIII. The Student Will Determine the Causes and Effects of Events and Actions.

3 27. The student will determine the stated effect of an action.
5 28. The student will determine the stated cause of an action.

IX. The Student Will Determine the Logical Generalizations Which Can Be Drawn From a Message.

3-5-8-11 31. The student will identify story outcomes.
5-8-11 32. The student will determine an appropriate conclusion.

The Student Will Distinguish Fact from Fantasy, Opinion, and Supposition.

3-5-8-11 36. The student will distinguish between real and unreal.
5-8-11 37. The student will distinguish between facts and opinions.

XI. The Student Will Recognize False and Invalid Statements.

3-5-8-11 40. The student will identify irrelevant statements.
5-8-11 41. The student will identify conclusions based upon insufficient evidence.

XII. The Student Will Follow Oral and Written Directions.

Oral Directions

3 44. The student will follow oral directions to complete a task requiring two steps.

5 45. The student will follow oral directions to complete a task requiring three steps.

Written Directions

3 46. The student will follow written directions to complete a task requiring two steps.

5 47. The student will follow written directions to complete a task requiring three steps.

XIII. The Student Will Identify Appropriate Sources for Needed Information.

5 49. The student will identify the appropriate source to obtain information on the spelling and meaning of a word.

XIV. The Student Will Use Appropriate Reference Skills with Dictionaries, Tables of Contents, and Maps.

Alphabetization

3 53. The student will locate by first letter a word within an alphabetized list.

5 54. The student will locate by third letter a word within an alphabetized list.

5 55. The student will alphabetize words by using the first letter.

Dictionary

5 57. The student will locate an entry word.

Table of Contents

3 59. The student will use a table of contents to identify the location (page number) of a specific story.

5 60. The student will use a table of contents to identify the major section most likely to contain a specific type of information.

Index

5 62. The student will use an index to locate a major topic by page number.

Maps

5 65. The student will locate information identified by major map symbols.

XV. The Student Will Organize Objects, Information, and Ideas into Logical Groupings and Orders.

Classification

3 68. Given appropriate headings, the student will classify familiar pictures, shapes, colors, and three-dimensional objects.

5 69. Given appropriate headings, the student will classify words which name objects with similar characteristics.

Organizational Patterns

3 73. The student will use an appropriate organizational pattern for groups of pictures.

5 74. The student will use an appropriate organizational pattern for segments of a story.

XVI. The Student Will Compose Grammatically Correct Sentences.

Grammar/Usage

5-8-11 77. The student will write the plural forms of nouns.

5-8-11 78. The student will use the appropriate form of common regular verbs.

Sentence Composition

5 81. The student will write simple declarative sentences which have simple subjects and simple verbs and which use appropriate English word order.

5 82. The student will write simple declarative sentences having compound subjects and/or verbs.

XVII. The Student Will Write Messages Which Supply the Necessary Information.

Supplying Information in Messages

5 91. The student will list the items or steps necessary for a specific activity.

XVIII. The Student Will Fill Out Common Forms Completely and Accurately.

3 97. The student will accurately complete forms requiring his/her name and age.

5 98. The student will accurately complete forms which request his/her address, phone number, date and place of birth, and parents' or guardians' names.

XIX. The Student Will Punctuate Correctly.

Periods

3 103. The student will use a period to complete a simple declarative sentence.

5 104. The student will use a period to complete abbreviations of common titles (Mr., Dr.).

Question Marks

5 105. The student will use a question mark to complete a simple interrogative sentence.

Commas

5 109. The student will use a comma to separate names of states from names of cities in an address.

5 110. The student will use a comma to separate the year from the day of the month in a date.

XX. The Student Will Capitalize Correctly.

3 112. The student will capitalize the first letter of the first word of a simple sentence.

3 113. The student will capitalize the word I.

5 114. The student will capitalize proper nouns which name persons, days of the week, and months of the year.

XXI. The Student Will Write Legibly.

3 117. The student will write his/her name legibly.

Mathematics Minimal Milestone Objectives

1. The student will count quantities.
2. The student will read and write numbers.
3. The student will round numbers.
4. The student will put numbers in order according to size.
5. The student will determine equivalent forms of fractions, decimals, and percents.
6. The student will add whole numbers.
7. The student will subtract whole numbers.
8. The student will multiply whole numbers.
9. The student will divide whole numbers.
10. The student will add and subtract fractions.
11. The student will multiply fractions.
12. The student will add and subtract decimals.
13. The student will multiply and divide decimals.
14. The student will find percentages.
15. The student will tell time.
16. The student will measure time, distance, capacity, and weight.
17. The student will measure temperature.
18. The student will identify the value of coins and bills.
19. The student will determine the information needed to solve a problem.
20. The student will estimate solutions by rounding.
21. The student will solve real-world problems involving whole numbers.
22. The student will solve real-world problems involving fractions, decimals, and percents.
23. The student will solve money problems.
24. The student will solve measurement problems using metric and customary units.
25. The student will interpret graphs and tables.

MATHEMATICS MINIMAL OBJECTIVES

Grade

I. The Student Will Count Quantities.

3 1. The student will count the number of objects in a set of no more than 100 objects.

5 2. The student will count the number of objects in a set of no more than 500 objects.

II. The Student Will Read and Write Numbers.

Arabic Numerals

3 4. The student will read and write 3-digit Arabic numerals.

5 5. The student will read and write 4-digit Arabic numerals.

Ordinal Numbers

3 7. The student, using a reference point, will identify in oral and written form the ordinal position of any object in a set of no more than 10.

5 8. The student, using a reference point, will identify in oral and written form the ordinal position of any object in a set of no more than 101.

Word Names

5 9. The student will read and write word names for 1-digit numbers.

III. The Student Will Round Numbers.

Whole Numbers

5 13. The student will round a whole number less than 100 to the nearest ten.

IV. The Student Will Put Numbers In Order According to Size.

3 19. The student will put in order any two whole numbers less than 100.

5 20. The student will put in order any three whole numbers less than 1,000.

V. The Student Will Determine Equivalent Forms of Fractions, Decimals, and Percents.

Fractions

5 23. The student will identify fractional parts or equivalent fractional parts using whole units or sets of objects that have been separated into halves, fourths, fifths, eighths, or tenths.

VI. The Student Will Add Whole Numbers.

3 32. The student will add any four 1-digit numbers, sums to 18.

3 33. The student will add a 2-digit number and a 1-, 2-, or 3-digit number, without regrouping.

3 34. The student will add a 1-digit number and a 2-digit number, sums through 99, with regrouping.

5 35. The student will add any four numbers of up to 3 digits.

VII. The Student Will Subtract Whole Numbers.

3 37. The student will subtract basic combinations, sums through 18.
3 38. The student will subtract a 1-digit number from a 2-digit number, without regrouping.
3 39. The student will subtract any two 2-digit numbers, without regrouping.
5 40. The student will subtract any two 4-digit numbers.

VIII. The Student Will Multiply Whole Numbers.

5 42. The student will determine basic multiplication combinations, products through 30.
5 44. The student will multiply a 1-digit and a 3-digit number (partial products through 30).

IX. The Student Will Divide Whole Numbers.

Grouping

3 47. The student will group twelve or fewer objects into sets of equal amount.

Division

5 48. The student will determine basic division combinations, dividends through 30.
5 50. The student will divide a 3-digit number by a 1-digit number with remainder zero, without regrouping.

X. The Student Will Add and Subtract Fractions.

Addition of Fractions

5 54. The student will add two proper fractions having like denominators, without simplification.

Subtraction of Fractions

5 58. The student will subtract two proper fractions having like denominators, without simplification.

XV. The Student Will Tell Time.

5 74. The student will tell time on the hour, half hour, and quarter hour.

XVI. The Student Will Measure Time, Distance, Capacity, and Weight.

Time

3 76. The student will state the days of the week.
5 77. The student will state the months of the year.
5 78. The student will state the date by month, day, and year, using a calendar.

Distance

5 81. The student will determine length, width, or height by measuring objects no more than 30 centimeters or a foot.

Capacity

5 84. The student will determine capacity by measuring quantities in metric cups and liters, or cups, pints, and quarts.

Weight

5 87. The student will determine weight by measuring to the nearest kilogram and pound.

XVIII. The Student Will Identify the Value of Coins and Bills.

3 90. The student will determine equivalent amounts using pennies, nickels, dimes, or quarters.

5 91. The student will determine equivalent amounts of up to five dollars using coins and paper currency.

XIX. The Student Will Determine the Information Needed to Solve a Problem.

5 94. In solving a real-world problem having one step, the learner will determine whether insufficient, sufficient, or extraneous information is given.

XX. The Student Will Estimate Solutions by Rounding.

Estimating Sums

5 96. The student will estimate the solution to a real-world addition problem involving up to two 2-digit numbers rounded to the nearest ten.

Estimating Differences

5 99. The student will estimate the solution to a real-world subtraction problem involving up to 2-digit numbers rounded to the nearest ten.

XXI. The Student Will Solve Real-World Problems Involving Whole Numbers.

3 105. The student will determine the solution to real-world problems involving addition of two 2-digit numbers, without regrouping.

5 106. The student will determine the solution to real-world problems involving addition of three 3-digit numbers.

5 107. The student will determine the solution to real-world problems involving subtraction of two 3-digit numbers.

5 109. The student will determine the solution to real-world problems involving multiplication of a 1-digit number and a 3-digit number (partial products through 30).

XXII. The Student Will Solve Real-World Problems Involving Fractions, Decimals, and Percents.

5 113. The student will determine the solution to real-world problems involving addition or subtraction of proper fractions with like denominators.

XXIII. The Student Will Solve Money Problems.

3 118. The student will determine the solution to real-world problems involving two purchases totaling no more than 50¢ and addition or subtraction.

5 119. The student will determine the solution to real-world problems involving three purchases totaling less than one dollar and addition or subtraction with change from a five dollar bill.

XXV. The Student Will Interpret Graphs and Tables.

5 133. The student will read and determine relationships described by pictographs expressed in whole units and simple tables.

APPENDIX B

CRITERIA FOR ACHIEVEMENT OF OBJECTIVES

From 1971-72 through 1973-74, assessment results were reported in terms of the percentage of students who achieved each objective. Beginning in 1974-75, census testing was implemented, test items were available for analysis by districts, and the percentage of students answering items correctly was reported, with no percentages on objectives. For 1974-75 and 1975-76, there were no official criteria for objective mastery, although guidelines were provided which could be used to determine mastery if a district so desired.

The movement away from setting criteria resulted in criticism from both legislators and from educators, who felt that criteria were necessary in order to interpret performance. Therefore, 1976-77 assessment results are reported in terms of both objective and item achievement.

The primary problem in establishing criteria is determining the minimal number of correct answers necessary to classify a student as having mastered an objective. Factors to be considered include the probability that a student could guess enough answers to achieve the objective, the possibility that a student has the skill but makes an occasional careless error, the philosophy that a student who has mastered a skill should be able to do it repeatedly, and the possibility that a student may have the skill but be so unfamiliar with a particular form of test item that it is answered incorrectly.

The philosophy that a master of an objective is one who can demonstrate the skill repeatedly would demand criteria of achievement of 100%. That is, a master should be able to exhibit the skill correctly every time. On the other hand, realists point out that perfection is nice, but few need to be 100% accurate to function effectively in everyday life. In trying to combine these two viewpoints, the following rationale was developed for establishing criteria.

1. For objectives with 1-4 items, all items should be answered correctly to reduce the likelihood of guessing and to make sure that students can demonstrate the skill in a variety of situations.

2. For objectives with 5 and 6 items, the probability of guessing is less, so a criteria can be established which allows one incorrect answer.

3. For sets with 7 and 8 items, both the lower probability of guessing and previous studies conducted by the assessment program indicate that two errors can safely be allowed.

4. For larger sets of items, such as those measuring vocabulary and spelling objectives, students should get about 85% of the items right, to allow generalization from the responses on these particular words to other sets of words from the state vocabulary and spelling lists. This means that students can miss two to three items per objective.

5. Since the probability of guessing correctly is related to the number of choices in a test question, the criteria should be higher for objectives measured by items with only two choices.

The criteria established through these rules are shown on the next page. Since no test can be 100% accurate in classifying a student's performance as mastery or non-mastery, special symbols have been used on the student and classroom reports to identify objectives on which the student almost reached the criteria. This category, marked "UNCERTAIN" on the reports, is based on 1 less than the criteria for objectives with 8 or fewer items, and 2 less than the criteria for objectives with 12 or more items.

Criteria for Objective Achievement for Items with 3 or 4 Foils

Number of Items	Criteria for Objective Achievement	Criteria for "Uncertain" Designation
1	1/1	--
2	2/2	--
3	3/3	2/3
4	4/4	3/4
5	4/5	3/5
6	5/6	4/6
7	5/7	4/7
8	6/8	5/8
14	12/14	10/14
15	13/15	11/15
16	14/16	12/16
19	16/19	13/19

Criteria for Objective Achievement for Items with 2 Foils

4	4/4	3/4
6	6/6	5/6
8	7/8	6/8

APPENDIX C

OBJECTIVE-ITEM MATCH

COMMUNICATION SKILLS—THIRD GRADE

OBJ. NO.	OBJ. CRITERIA FOR ACHIEVEMENT	CRITERIA FOR "UNCERTAIN"	ITEM NUMBERS
1	16/19	13/19	1-19
10	3/3	2/3	53-55
15	13/15	11/15	38-52
18	7/8	6/8	70-77
23	4/5	3/5	59-63
27	2/2	--	64,65
31	2/2	--	66,67
36	2/2	--	68,69
40	2/2	--	57,58
44	2/2	--	20,21
46	2/2	--	22,23
53	2/2	--	78,79
59	2/2	--	80,81
68	4/4	3/4	24-27
73	1/1	--	56
97	1/1	--	28
103	3/3	2/3	29-31
112	3/3	2/3	35-37
113	3/3	2/3	32-34

MATHEMATICS—THIRD GRADE

OBJ. NO.	OBJ. CRITERIA FOR ACHIEVEMENT	CRITERIA FOR "UNCERTAIN"	ITEM NUMBERS
1	4/5	3/5	82-86
4	5/6	4/6	87-92
7	2/2	--	96,97
19	6/6	5/6	93-95, 98-100
32	4/5	3/5	101-105
33	5/6	4/6	106-111
34	4/5	3/5	112-116
37	5/7	4/7	117-123
38	4/5	3/5	124-128
39	4/5	3/5	129-133
90	3/3	2/3	134-136
105	4/4	3/4	137-140
118	4/5	3/5	141-145

COMMUNICATION SKILLS—FIFTH GRADE

OBJ. NO.	OBJ. CRITERIA FOR ACHIEVEMENT	CRITERIA FOR "UNCERTAIN"	ITEM NUMBERS
1	16/19	13/9	1-19
2	14/16	12/16	62-71, 78-83
5	2/2	--	84,85
10	3/3	2/3	75-77
11	3/3	2/3	72-74
12	6/8	5/8	96-103
15	12/14	10/14	25-38
18	7/8	6/8	104-111
19	4/4	3/4	56-59
20	2/2	--	60,61
23	5/6	4/6	50-55
24	2/2	--	131,132
28	2/2	--	44,45
31	2/2	--	46,47
32	2/2	--	112,113
36	2/2	--	48,49
37	4/4	3/4	133-136
40	2/2	--	94,95
41	2/2	--	92,93
45	2/2	--	20,21
47	2/2	--	90,91
49	1/1	--	123
54	2/2	--	125,126
55	1/1	--	124
62	2/2	--	88,89
65	2/2	--	129,130
74	1/1	--	127
77	3/3	2/3	39-41
78	2/2	--	42,43
81	1/1	--	123
82	2/2	--	121,122
91	2/2	--	86,87
98	1/1	--	128
105	2/2	--	114,115
109	2/2	--	118,119
110	2/2	--	116,117
114	3/3	2/3	22-24

MATHEMATICS—FIFTH GRADE

OBJ. NO.	OBJ. CRITERIA FOR ACHIEVEMENT	CRITERIA FOR "UNCERTAIN"	ITEM NUMBERS
2	3/3	2/3	146-148
5	3/3	2/3	137-139
8	2/2	--	149,150
9	5/6	4/6	140-145
13	3/3	2/3	176-178
20	3/3	2/3	151-153
23	6/8	5/8	191-198
35	3/3	2/3	154-156
40	4/4	3/4	157-160
42	4/4	3/4	161-164
44	4/4	3/4	165-168
48	4/4	3/4	169-172
50	3/3	2/3	173-175
54	2/2	--	199,200
58	2/2	--	201,202
74	3/3	2/3	184-186
78	2/2	--	187,188
91	2/2	--	189,190
106	3/3	2/3	179-181
107	2/2	--	203,204
109	2/2	--	205,206
113	2/2	--	207,208
119	2/2	--	182,183
133	2/2	--	209,210